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cont'd

6,002,103, which is a continuation of, and claims the benefit of the filing date of, U.S. Patent Application Serial No. 08/342,378 filed November 18, 1994, entitled Method And Apparatus For Receiving A Universal Input Voltage In A Welding Power Source, which issued on Feb. 11, 1997, as Patent No. 5,601,741.

IN THE CLAIMS

1 1. (Amended) A welding, cutting or heating power
2 source capable of receiving a range of input voltages,
3 comprising:
4 an input rectifier configured to receive an ac input
5 and [providing] to provide a first dc signal;
6 [a dc voltage stage configured to receive the first dc
7 signal and providing a second dc signal;]
8 [an inverter] a converter configured to receive the
9 first [second] dc signal and [providing a second ac signal]
10 to provide a converter output, and configured to receive at
11 least one control input;
12 an output transformer configured to receive the [second
13 ac signal] converter output and to provide [providing] a
14 third ac signal having a current suitable for welding,
15 cutting or heating;
16 an output circuit configured to receive the third ac
17 signal and [providing] to provide a welding signal; and
18 a controller, including a power factor correction
19 circuit, configured to provide at least one control signal
20 to the [inverter] converter. [; and
21 an auxiliary power source configured to receive a range
22 of input voltages and providing a control power signal to
23 the controller].

1 2. (Amended) The apparatus of claim 1, further
2 including an [wherein the] auxiliary power source [is] capable
3 of providing [the] a control power signal at a preselected

B² 4 control signal voltage, regardless of the magnitude of the ac
5 input signal.

B³ 1 4. (Amended) The apparatus of claim 1, wherein the
2 [dc voltage stage] converter includes a boost circuit.

1 5. (Amended) The apparatus of claim 1, wherein the
2 [inverter] converter includes a pulse width modulator.

1 9. (Amended) A method of providing a welding, cutting
2 or heating current from a range of input voltages,
3 comprising:

4 [rectifying an ac input and providing a first dc
5 signal];

6 converting and power factor correcting an ac [dc] input
7 signal to a second ac signal; and

8 transforming the second ac signal into a third ac
9 signal having a current suitable for welding, cutting or
10 heating [; and

B⁴ 11 receiving the ac input and providing an auxiliary power
12 signal source at a preselected control power signal voltage,
13 regardless of the magnitude of the ac input signal].

1 10. (Amended) The method of claim 9, wherein the
2 [step of] converting the ac [dc] input signal includes [the
3 steps] of converting the [dc] ac signal to a [second] dc signal
4 and inverting the [second] dc signal to provide the second ac
5 signal.

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1 11. The method of claim 9 further including [the step
2 of] providing control signals to an inverter.

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1 12. (Twice) The method of claim 9, [wherein the]
2 including [step of] providing [the] auxiliary power signal
3 [includes the step of] by transforming the ac input signal.

1 13. The method of claim 10, wherein [the step of]
2 converting the first dc signal to a second dc signal includes
3 boosting the voltage of the first dc signal.

1 11 14. The method of claim 10, wherein [the step of]
2 inverting includes the step of pulse width modulating.

1 12 15. The method of claim 10 further including [the step
2 of] rectifying the third ac signal.

1 13 16. The method of claim 10 further [includes the step
2 of] including cycloconverting the third ac signal.

3 B4 17. (Amended) A welding, cutting or heating power
4 source for providing a welding, cutting or heating current
5 from a range of input voltages, comprising:
6 rectifier means for receiving an ac input and providing
7 a first dc signal;
8 converting means for converting and power factor
9 correcting the dc signal to a second ac signal; [and]
10 transforming means for transforming the second ac
11 signal into a third ac signal having a current suitable for
12 welding, cutting or heating; and
13 output means for providing a welding, cutting or
14 heating current [; and
15 auxiliary power means for receiving the ac input and
16 providing an auxiliary power signal source at a preselected
17 control power signal voltage, regardless of the magnitude of the
18 ac input signal].

1 20. (Amended) The apparatus of claim 17, [wherein
2 the] further including means for providing [the] an auxiliary
3 power signal and [includes means] for transforming the ac input
4 signal into the auxiliary power signal.